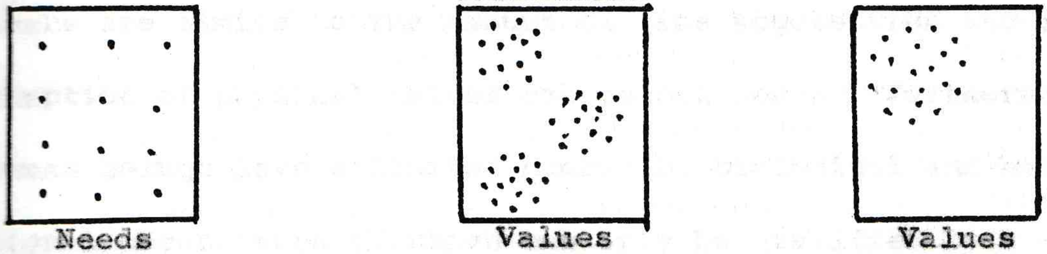
exchange, although not all of it, that always precedes physical exchange, can be accounted for by this fact.

Distribution

Values have a widespread, but uneven distribution.[33] Or to put the proposition more precisely, values are widely, but unevenly distributed while the needs they satisfy are widely, but evenly distributed. Thus,

Figure 2.5



Needs (competitive)

Values (oligopoly)

Values (monopoly)

The distribution of needs in the first box resembles a competitive situation, and is based on the belief that every human being has a limited range of needs that bear strong resemblance to the need systems of other humans.

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[33] This proposition is a modification of one presented by Professor William Mitchell to explain the incapacity of the American polity to fully mobilize the resources of goverance. William C. Mitchell, The American Polity (New York: Free Press, 1962), p. 97.

Value distributions in the second and third boxes resemble oligopoly and monopoly respectively. By superimposing the need box over either of the value boxes, it becomes clear that few needs can actually be met unless aggregation occurs. The more widespread and uneven the distribution of values and the more widespread and even the distribution of needs, the less likely that all needs of all people can be met. This difficulty arises from the basic difference between values and needs: needs require continual satiation--there are limits to the amount of time acquisition and consumption of physical values can be postponed. Furthermore, human beings have a limited number of biological and emotional needs, each of which can only be gratified by a limited range of values. Biogenic and neurogenic need systems are fixed, stable and virtually unalterable--they are given. Unlike needs, values can be managed within far broader limits. There are two sources of value management: natural and human. In a natural state, values, or the resources that eventually become values, are seldom evenly distributed; consequently, some territorial domains inevitably have more natural value potential than others. A particular agglutination of values can be altered drastically by changes in the state of the environment as a result of meteorological shifts. Values can also be accumulated, or aggregated by human agents. In fact, there seems to be a decided proclivity in human "nature" to accumulate values wherever possible beyond existing needs. When a person possesses a larger supply of values than is necessary to meet his own personal needs, he is in an excellent position to employ the surplus to broaden his exchange opportunities. Thus, oligopolization of values may occur as a consequence of natural conditions or as a result of human management; whatever the reason, the aggregation of values creates difficulties for some of the people who need them.

The aggregation of people into groups may be regarded as a significant technique for (a) oligopolizing needs to bring them into a congruent relationship with the existing distribution of values, and (b) concentrating dispersed needs and limited values into markets for efficient exchange. The second phenomenon can be examined by observing the hypothetical formation of a liars club. Several liars in a community come together to form a club, on the grounds that concentrating liars in a market will produce greater and more intensive exploitation of existing lies, and this, in turn, will foster an intrinsic good: the happiness of liars. In terms of exchange opportunities, the members of the new club have gained tremendously: the search procedures normally involved in finding someone to exchange lies with has been cut to almost nothing, thereby reducing the cost of lying; the range of liars brought together allows a considerable, and profitable, refinement in exchange choices--a member can specialize in fishing, hunting, war and sex stories. In effect, the club has aggregated a normally dispersed system of lies and the people who enjoy lying. However, for the liars excluded from the club, the market has suddenly contracted; for them, lies have suddenly gotten more unevenly distributed than before. Probably the first response of those excluded will be to try to join up. If they are refused membership, they may form their own club, thus effectively aggregating all the remaining lies and liars in the community. The point is rather direct: whenever values aggregate, regardless of who or what aggregates them, the people who need them try to get near them. Some aggregate behavior is an attempt to bring human needs into a congruent relationship with the oligopolization of values; other group behavior is simply a way of concentrating both needs and values into efficient systems of exchange called markets. A third class of aggregate behavior which we need not discuss here stems from the need to organize the production of values.

Even though people, as a general rule, have the same kinds of needs and often the same hierarchy, they do not necessarily have the same numbers or syndromes. People may have a few needs or many needs, and the needs they do have may come in different packages as a result of differential socialization. Nor does each need require simultaneous gratification--needs are satisfied in sequences. Thus, X may need affection when Y needs water. Some people even have specialized or pathological needs that sublimate all others. We tend to think of such needs as being associated exclusively with a very narrow range of "deviant" behavior, including drug addiction, alcoholism, homosexuality, and accute neurosis and psychosis. Yet, as our powers of discrimination about human behavior improves, it becomes increasingly apparent that the differences between "normal" and "abnormal" people is one of degree (quantitative) rather than kind (qualitative). The range of pathologies may be broad, including many that have not as yet been identified. A very good candidate for inclusion would be the obsession of middle-aged, American males for work. The effect of pathological needs, variant numbers of needs, and different need packages, and the fact that no single need occupies center stage at any one time, is to aggravate the existing condition of need dispersion. Thus, X, who needs a "fix," meets Y, who needs affection, on a bench in Central Park. X has a number of values, including affection, which he would happily exchange for a "fix." But no exchange will occur until X meets a pusher and Y encounters a lonely girl. Had X not been afflicted with a pathological need for dope, some other need capable of gratification by Y might have been present, and interaction might have occurred. The problem seems to be one of declining opportunities: X reduced his opportunities for exchange except in aggregated values markets by becoming an addict. Thus, the more incongruent the need systems of people, the lower the probability of interaction, except in specialized markets. The addict will undoubtedly learn that he can increase his opportunities for acquiring a "fix" by frequenting areas canvassed by pushers; the man needing affection will probably learn that more affection is available at the Playboy Club than in Central Park. The ideal conjunction of needs (the need of one person can be a value for another), seldom occurs, even though Winch, *et al.*, have discovered some evidence of an interest in this kind of need complementariety in mate selection.[34] Two examples of complementariety are (a) a person who needs to submit interacting with a person who needs to dominate and (b) a person who needs to nurture interacting with a person who needs succorance.

Efficiency and Rationality

All human activity is affected by a concern for efficiency and rationality. This postulate has really been assumed from the beginning, and the reader may have been painfully aware of its unannounced presence in much of the prior analysis. Two basic, but intimately related activities underlie all human behavior: learning and exchange. They are, so to speak, different sides of the same coin. Basically, man, like all species, is interested in survival, health and propagation. The nature of reality (scarcity) and the way man has come to conceptualize reality (every value is property) has made survival and health (and even propagation) dependent upon participation in a system of exchange. Learning may best be described as an incidental, wholly unintentional byproduct of exchange. There is no reason to inquire which is most important because, for any observer, they occur simultaneously: every time a value changes hands, it becomes either a reward (reinforcement) or a punishment (deterrence) creating the conditions for shaping the personality. It is the nature of exchange in the first instance that creates the universal human concern for efficiency and rationality; indeed, exchange cannot be discussed apart from an examination of these two concepts.

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[34] Robert F. Winch, Thomas and Virginia Ktsanes, "The Theory of Complementary Needs in Mate Selection: An Analytic and Descriptive Study," The American Sociological Review, XIX (1954), 241-249.

By efficiency is meant the optimal use of resources, including those available in the personality, to implement decisions to acquire values at a profit. Rationality is the process of making decisions that will be efficient. These definitions are based upon an arbitrary division of the value acquisition process between decisional and implementation segments. The decisional process involves the identification of values capable of meeting needs, assessment of the consequences of available alternatives, speculation about how to mobilize implementation resources, and selection of acquisition strategies. The implementation segment consists of actually carrying through the decision as planned by doing whatever is necessary with what is available to get the designated value at a profit. Each concept must be defined in terms of the perceptual, resource and skill limits of the organism. Thus, if an organism has, in a decisional period, done his best to link his needs to the value to be acquired through his best information, his decision must be classified as rational. His information may have been incorrect, and his behavior errant as a result, but the decision may still have been rational. Thus, error is insufficient proof of irrationality. Similarly, if an organism has, during an implementation period, employed his resources fully and to the best of his ability, then his behavior must be classified as efficient, even though his level of profit may not have been as high as expected. Efficient execution of plans depends upon the capacity to coordinate personal skills and environmental givens in sequentially related chains of activity. In both cases, outcomes are subjectively limited: rationality by the natural subjectivity of encapsulated belief systems and efficiency by externally given limits on skills and resources. In either case, man intends to be rational and efficient; the difficulty of carrying either of these activities to perfect fruition often produces a kind of confusion in the events of reality that reveal little manifestation of either rationality or efficiency.

This avowedly existential and subjective view of rationality and efficiency obviously precludes acceptance of the normative model. According to March and Simon, the normative model

> assumes (1) that all of the alternatives of the choice-making are "given"; (2) that all of the consequences attached to each alternative are known . . . ; (3) that the rational man has a complete ordering (or cardinal function) for all possible sets of consequences.[35]

The reality of rationality and efficiency strike far from the mark set by the normative model. First, alternatives are conceptual inventions, and because a good deal of control can be exercised over cognitive activity, alternatives can be manufactured or reinterpreted at will. Because alternatives concern means and because means are temporally prior to ends, it follows that an end can never be confidently employed to test the adequacy of an alternative. One must deal with hypothetical ends, and therefore, with hypothetical alternatives or means. Hence, whether cognitive alternatives approximate real ones and whether they are adequate for the end in view are questions that can only be answered experimentally. Of course, alternatives must be chosen, and hunch, or extrapolation from other decisional settings in the past will normally be employed in selection. In any case, the encapsulated nature of belief systems decrees that information about consequences is apt to be limited and hypothetical. Second, the existence of an alternative and a consequence depends upon the capacity to conceptualize, something which would seem to require that the person conceptualizing had reached at least the stage of formally operational intelligence. Since it is possible that many people do not develop beyond some of the lower stages of intelligence, the capacity to formulate alternatives and consequences is not uniformly distributed. Thus, some persons are severely handicapped in making decisions. Third, utility ordering for all possible sets of consequences depends upon a utility ordering of needs, which, if the prior analysis of motivation is correct, occurs at the emotional need level only under conditions of prolonged deprivation. In many cases, needs are of equal importance, and values, as a consequence, are of equal preference. A utility ordering would seem to require an orderly, sequential satiation of needs, so that no more than one need requires satiation at any one time. However, a number of needs may be deprived simultaneously, and acquisition will be less of function of utility order than of which value is encountered first.

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[35] James March and Herbert Simon, Organizations (New York: John Wiley and Son, 1955), p. 138.

Efficiency and rationality are carried forward in human behavior by the universal human aspiration for profit. In the abstract sense,

profit df value remaining after cost of acquisition has been subtracted;[36]

cost df positive value forgone in order to obtain another positive value (in the sense of giving a value in order to get one and/or giving up an opportunity to acquire another positive value), or negative value incurred in the process of acquiring a positive value.[37]

According to Homans, "no exchange continues unless both parties are making a profit."[38] Because everything costs something, part of the utility of a value depends upon the existence of profit. However, cost is situationally defined. In a munificent environment (few costs, many profits), cost is likely to be defined in terms of positive value forgone, probably other opportunities. Alternatively, in an aversive environment (many costs, few profits), cost will be defined in terms of negative values incurred. The reasons are obvious: first, in a munificent environment the drive for profit will lead to an accumulation of positive values (capital) and any marginal values can be effectively employed to eliminate costs or punishments from the environment; second, in an aversive setting, the pervasiveness of cost will produce a disposition to define profit in terms of "breaking even." A munificent environment allows a choice among positive goods, but an aversive environment makes even marginally significant values a matter of serious cost. In the most aversive of situations, the elimination of a few costs (rather than acquisition of positive values) may come to be conceptualized as profitable.

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[36] Homans, *op. cit.*, pp. 61-64.

[37] *Ibid.*, pp. 57-61. [38] *Ibid.*, p. 61.

It would be a serious empirical error to assume that exact accounting of profit and cost pervades human activity. Exact accounting is absolutely necessary for extension of efficiency and rationality to complex economic and bureaucratic enterprise. The introduction of money as a medium of economic exchange was probably the most significant innovation of economic evolution precisely because it raised man's discriminatory potential to new heights, permitting considerable refinement in the coordination and integration of cooperative activity. Money made precise accounting possible, and precise accounting allowed increased refinement of perception, skill, coordination, incentives and learning, creating more precise and definite relationships between factors of production. In general, the greater the precision of activity, the higher the efficiency. However, even where precise accounting procedures have been available, business decisions have often been made on the basis of deceptively simple and seemingly conservative criteria. Cyert, Dill and March, for example, found that selection between alternatives in concrete situations was based upon budgetary and improvement feasibility ("is the money available" and "is the project clearly better than existing procedure?"). The use of simple criteria was inevitable because of the "awkwardness of developing a single dimension on which all relevant considerations could be measured."[39]

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[39] R. M. Cyert, R. W. Dill, and J. G. March, "The Role of Expectations in Business Decision Making," The Making of Decisions: A Reader in Administrative Behavior, ed. William Gore and J. W. Dyson (New York: Free Press, 1964), p. 313.

The Problem of Calculating Profit

On balance, most human transactions do not involve the exchange of money, especially where the values exchanged are sentiments. During most of their lives, in most of their activities, men are forced to judge profit with the crude calculators of the ancient barter economy. The inexactness of profit computation in everyday life stems from four sources: (a) the computational tools, (b) the computational possibilities, (c) lack of experience with costs, and (d) environmental change. The primary instrument employed in calculation is an

expectation df a predictive belief, formed by generalization from past acquisition states.

The expectation involves only the acquisition of the desired value, but the determination of whether or not the value acquired was actually the value expected is required before calculation of profit can begin. Because expectations are elements of encapsulated belief systems, they are bound to vary greatly in precision and accuracy; on a scale of precision, those involving money would be high while those involving goodness, truth, justice and beauty would be low.

Fortunately for man, most expectations fall somewhere between the two extremes. If an expectation lacks determinacy, that is to say, if the nature of the value sought is not precisely known, then computations based on it will prove difficult to execute. For example, a man looking for eternal salvation is normally at a loss to know exactly when, in the concrete sense, he has found it because there are few (if any) consensually accepted tests for achievement. It should be noted in passing that many of man's most prized values, including freedom, liberty, democracy and justice fall into this category. In effect, where the value sought is ambiguous, abstract and poorly defined, certification that the value has been acquired will be equally inexact.

The range of computational possibilities is also a point of serious difficulty in calculating profit. Figure 2.6 indicates eight specific degrees of profit, depending upon whether or not the value was acquired, and whether or not positive values were forgone or negative were incurred, or both. The basis for the ordering is that organisms want values at no cost, but if cost must be incurred, forgoing positive values is less costly than incurring negative values.

Figure 2.6

Degrees of Profit

High	1	value received, no positive value forgone and no negative value incurred
	2	value received, positive value forgone, no negative value incurred
	3	value received, no positive value forgone, negative value incurred
	4	value received, positive value forgone and negative value incurred
	5	no value received, no positive value forgone and no negative value incurred
	6	no value received, positive value forgone, no negative value incurred
	7	no value received, no positive value forgone, negative value incurred
Low	8	no value received, positive value forgone and negative value incurred

It is hypothesized that the incentive to calculate profit depends upon the existence of cost, which would rule out situations of the first degree above. Given a well-integrated personality, the level of cost is inversely related to the incentive to calculate profit; that is, the incentive to compute profit is associated directly with a decline in the level of preferred states. Thus, the eighth degree would be more likely to elicit computation of profit than the second degree. Given a poorly integrated personality, i.e., neurosis, psychosis, schizophrenia, etc., the capacity to calculate profit may be severely impaired.

The ability to determine whether or not a positive value has been forgone or a negative value incurred depends on the prior evolution of perceptual criteria, based upon prior experience with the values in question. Where prior experience is absent, the process is complicated considerably. The nagging question that faces every person who has acquired a value and decided to compute profit is: has the positive value forgone really been forgone? The answer to this question rests on the accuracy of the organism's knowledge of the real alternatives available to him. Here, the same problems encountered in making rational decisions (choosing the right alternative) become important. Learning may produce cognitive change, and the organism may come to realize that his perceptions were unrealistic, and that what he once thought was a cost really was not a cost after all. Environmental change may also affect the ability of an organism to compute profit because changes in the distribution of values may drastically alter the elements of cost, so that even though expectations may remain stable, each new computation may involve novel, as yet uninterpreted values. Thus, the lack of experience with positive values forgone and negative values incurred may reduce the incentive to compute profit, and, concomitantly, may reduce the efficiency of the computational process.

The crude computational tools, the difficulties inherent in applying them successfully in every situation, and the ambiguities created by environmental change forces man to prevaricate: he intends to maximize, but in concrete situations he is frequently willing to settle for something less than originally bargained for. The fact that men are both maximizers and satisficers[40] may seem paradoxical at first; in reality, it is functional for both man and society. The intent to maximize provides an important incentive for mobilizing all available resources and employing them as efficiently as possible in acquisition activity; it enables man to bring everything he possesses to bear on the difficult task to getting values. Alternatively, his willingness to settle reflects acceptance of the sometimes brutal fact that values can seldom be maximized. No man ever controls his own environment completely; for most men, control is almost nil. That men intend to maximize in a system of maximizers places considerable strain on the availability of values already made scarce by circumstance. Values are scarce, opportunities changing, information about reality decaying with change; under these conditions, acquiring values is always problematic. It is unlikely that the optimistic intent generated by the maximizing drive can be achieved in reality. Thus, it becomes "efficient" to satisfice, not only in the calculation of profit, but, as March and Simon suggest, also in the selection of alternatives in decision-making. To "settle" where survival and health are problematic amounts to wisdom; to maximize under such conditions would invite disaster. The willingness to settle also has important implications for social solidarity: it tends to reduce conflict, while at the same time maintaining the maximum individual output of efficient activity in social enterprise. In an environment of scarcity, the willingness to settle assures that everyone will get something, and this alone is a considerable source of comfort for society. Thus, we may modify Homans' proposition that "no exchange continues unless both parties are making a profit" by adding a corollary to the effect that the risks to continued interaction imposed by the conditions just elaborated dispose men to be flexible in their computation of profit. If men acted only on the basis of hard, preconceived, totally unadjustable notions about maximizing profit, the cognitive limits of rationality and efficiency would decree an end to all interaction and exchange.

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[40] March and Simon, p.140.

The Laws of Human Exchange

The thorniest problem encountered in elaborating the notion of efficiency in exchange involves formulation of the universal, operational criteria employed by men to implement efficiency. Homans suggests five laws, four of which have been adopted here, but restated in slightly different form. These laws have most often been used to explain learning, but, as Homans points out, learning and exchange are really the same thing.[41] Ergo, exchange must be guided by the same laws. To the four laws elaborated by Homans I will take the liberty of adding two additional propositions that are implicit in his work, but not explicitly identified as laws, and an original law meant to express the willingness to settle.

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[41] Homans, pp. 68-70.

I. The Law of Generalization

The more a current or future state of the environment resembles one in the past in which rewarding activity has been elicited, the higher the probability that the operant which elicited the rewarding activity will be emitted when similarly motivated.[42]

II. The Laws of Discrimination

The Law of Quantity. The more often that X's activity elicits from Y rewarding activity, the greater the probability that X will emit similar activity, probably to Y, in the future.[43]

The Law of Quality. The more valuable (in a social sense) to X the activity elicited from Y, the greater the probability that X will emit the activity which elicited the rewarding activity, probably to Y, in the future.[44]

The Law of Intensity. The more satisfying (drive and tension reducing) the activity elicited from Y, the less valuable any further unit of similar activity becomes to X, and the lower the probability that the eliciting operant will be emitted again until the need has again been evoked.[45]

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[42] Ibid., p. 53.

[43] Ibid., p. 54.

[44] Ibid., p. 55.

[45] Ibid.

III. The Law of Continued Interaction

The more often that exchange meets expectation and reveals profit (and the more the profit revealed), the higher the probability that interaction with the person supplying such rewarding values will continue over time.[46]

IV. The Law of Distributive Justice

When X exchanges activity with Y, he will expect that the rewards of both him and Y be equal to the costs of each (the greater the rewards, the greater should be the costs) and that profit of both him and Y be proportional to the investments of each (the greater the investment, the greater should be the profit) (Y will feel the same way): the rule of distributive justice;

and "when each man is being rewarded by some third party he will expect the third party to maintain this relationship between the two of them in the distribution of rewards";[47]

the greater the distributive justice, the greater the probability of continued interaction,

except, the more aversive the environment, the lower the increment of profit upon which continued interaction depends, and the more distributive justice becomes a criterion for continued interaction.

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[46] *Ibid.*, p. 60.

[47] *Ibid.*, p. 75.

V. The Law of Satisficing

The (a) cruder the computational tools, (b) lower the discriminatory potential, (c) more limited the experience with novel costs and rewards, and (d) greater the environmental change, the lower the ability to calculate profit;

and, the lower the ability to compute profit, the higher the probability of settling for drive or anxiety reducing values without regard to cost.

Each law is an empirical expression of internal psychological mechanisms that enable men to extend efficiency to their exchange activities. The Law of Generalization states a time honored (some observers might insist time worn) "conservative" doctrine: continue to try what has worked well in the past. It is obviously more efficient for an organism to use the tools of adaptation and adjustment it already possesses than to incur the cost of developing new tools. Thus, when a setting resembles a setting in the past when a value has been elicited, it is efficient to try a similar operant. But it is also efficient to determine when settings change and identify the rewarding properties of values. The Laws of Quantity and Quality make it possible for the organism to maximize high frequency and objective quality. The Law of Intensity expresses another kind of discrimination--that is, a way of deciding which values are important and which are not by ruling out those which have just reduced biogenic tension or emotional anxiety. Efficiency is enhanced considerably when an organism recognizes that any further unit of activity after satiation will be of no consequence, freeing the organism to pursue some other value. The Law of Continued Interaction adds considerable refinement to existing efficiency by allowing a comparison of the reward obtained with the costs of acquisition to determine whether or not it was really worthwhile. The capacity to calculate profit makes it possible for the organism to refine the integration of its activity to get more out of existing levels of output. The Law of Distributive Justice reveals the social nature of cost, profit and investment. In effect, men judge their own costs by examining the costs of others. If it turns out that the other party to an interaction is getting more out of it than the judging party, there will be some basis for discontinuation of the interaction.[48] The failure of distributive justice is a cost to be reckoned with. Furthermore, when the environment is aversive and profits small, the equal distribution of costs will more and more become a criterion for continuing interaction. Justice demands relativity in all matters, including punishment. The principle is efficient because it provides an additional, valuable benchmark for determining how to use activity: it is inefficient to continue activity when the other party to interaction is getting more profit than either costs or investments justify. The fact that X does better than Y diminishes Y's profit somewhat, even though his own profits may be perfectly satisfactory without considering the distributive justice factor. Thus, X's unjust profit becomes a cost which must be included in Y's calculation of profit in order for Y to determine what his total reward actually amounts to. In a sense, the Law of Distributive Justice attunes the organism to the possibility that the other person may be more efficient; his feeling of injustice is a way of communicating the efficiency differential between two organisms. Finally, the Law of Satisficing enables those incapable of computing profit easily to acquire the values necessary for survival, even when acquisition may be costly. It reflects the fact that, at bottom, values satiate needs essential to survival and health, and that under many conditions (inability to compute profit and severe scarcity) profit is a luxury that can easily be forgone as long as basic needs are met.

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[48] *Ibid*., p. 76.

Modification: The Way to Profit

The transactional process through which exchange of values is executed is

interaction df the reciprocal exchange of values
between two or more organisms with the result that all
or some of the organisms' activities are modified.

Modification means that the organism has done something in response to a stimulus from another organism that it would not have done in the absence of the stimulus or in the presence of some other stimulus. The notion of modification also includes the emission of operants and respondents that have the effect of either stopping or changing activity already in progress. Thus, modification means that activity has been elicited, halted or changed.[49] In terms of a totally subjective frame of reference, the universal human interest in maximizing profit requires that all men aspire to direct the modification process to their own benefit. But this otherwise primordial drive is bounded by the empathetic factors revealed in the principle of distributive justice. The ideal way to make a profit and maintain distributive justice "is to give the other man behavior that is more valuable for him than it is to you and to get from him behavior that is more valuable to you than it is to him."[50] The realities of exchange, however, make complete congruity highly improbable. Perhaps this can be illustrated by the following schema (let A and B stand for the participants, X,Y,Z,P,Q,R stand for values, and $>$ for "greater than"):

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[49] A careful reader will note the similarity between this definition of modification and Dahl's definition of power. The reason for employing modification was to broaden the category sufficiently to include authority, influence

Figure 2.7

1. Objective, Completely Proportional Modification

Wants	Has	Calculates		gets	for	Outcome
A_X	$A_{Z,Y}$	$A(Z > Y)$	A	X	Y	profit
B_Y	$B_{X,P}$	$B(P > X)$	B	Y	X	profit

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and power as different, situationally defined types of modification. See Robert Dahl, "The Concept of Power," Behavioral Science, III (1957), 201-215.

[50] Homans, p. 62.

Figure 2.7 (Continued)

2. Objective, Proportional-Disproportional Modification

Wants	Has	Calculates		gets	for	Outcome
A_X	$A_{Z,Y,Q}$	$A(Z>Y>Q)$	A	X	Q	profit
B_Y	$B_{Y,P,R}$	$B(X>P>R)$	B	Q	X	cost

3. Objective, Completely Disproportional Modification

A_X	$A_{Z,Y,Q}$	$A(Z>Y>Q)$	A	R	Z	cost
A_Y	$A_{X,P,R}$	$B(X>P>R)$	B	Z	R	cost

In the first exchange, by some happy coincidence, A wanted and got X, which B valued least, and B wanted and got Y, which A valued least. Each was able to make a profit and still insure distributive justice because the values of each were ordered in such a way that each paid the same cost: the least preferred value. However, given our previous assumptions, namely (a) that need systems are seldom congruent, (b) that values are distributed in a way that makes exchange difficult (i.e., X has something he wants to give Y, but Y does not want to interact with X, or does not have the value X thinks he has, or does not want the value X wants to give), and (c) that men have difficulty ordering their alternatives, consequences and values, the probabilities are almost nil that this situation will ever develop.

Where it does, we would expect to find that it endures for long periods of time. Most exchanges are therefore of the second and third types. In the second exchange, A got X, which B valued most in exchange for Q, which A valued least. This situation represents a compromise between profit and simply acquiring a value regardless of cost. It is probably the most frequent. In the third exchange, both A and B incurred costs: A because he did not get the value he wanted, even though he lost his most precious value, and B because he lost a value, albeit unimportant without eliciting the desired value. In relative terms, A incurred greater cost than B, and thus the principle of distributive justice failed, imposing still more cost on A. The exchange undoubtedly represents deception on the part of B or stupidity or blindness on the part of A. Whatever the case may be, it is the kind of exchange that is least likely to continue.

The relative predominance of the last two types of exchange forces men to adapt the ideal formulation posited by Homans in favor of two highly selfish (and simultaneous) stratagems: (a) to offensively modify other men as much as possible, and (b) to defensively resist modification by others. Distributive justice comes to have a totally subjective and protective significance, a way of limiting cost. Ideally, of course, distributive justice is also a way of continuing interaction. Continued interaction is obviously more efficient than discontinued interaction because it preserves access to values--no man has an interest in alienating a man who is a ready source of values. As efficient as distributive justice may seem in preserving the bases of interaction, the realities of value distribution and other kinds of scarcity overshadows the utility of giving the other party something rewarding to him but worthless to you in order to get a value. Instead, it becomes efficient to get as much as possible, even at risk to future interaction.

The Functional Personality

Every component of the human personality performs a function for the organism (and for society).[51] That is to say, whatever resides within the "black box" is there because it does something of lasting importance for the organism and the social system of which it is a part. The occult character of the "black box" means that we shall probably never know empirically precisely how the personality is constructed and how its construction relates to the physiology of the brain. We are forced to rely, as a consequence, upon a coherent conceptual representation of what we think it may contain. As a first approximation, the personality is an integrated set of structures that perform specific functions for the organism. They include a motivational system, a cognitive system, an operant-respondent skill trait system and an ego system. The functions performed by each are determined by three general problems faced by every man: survival, adjustment of the organism to situational demands that cannot be managed and adaptation of those elements that can be modified. Because every human faces substantially the same problems, the general structure of the human personality is common to the species; variations in the contexts in which problems occur create variations in personality content. Thus, every man has needs and motives; models of reality, authority figures, and primitive beliefs; operant and respondent skills; and an ego. But only a small proportion of the world's population have strong achievement needs, relate in totally pragmatic ways to situational demands, believe in the value of work for its own sake, gain values through socially approved forms of deception, and link ego strength directly to success in competition. These modal traits are peculiar to Americans, and have grown up in direct response to the peculiar problems and conditions of the American situation. The general parameters of human existence are universal enough to produce in every human being essentially the same personality structure, but the content of each component of that structure varies with cultural and subcultural setting.

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[51] This postulate is a logical extension of the functionalism of Hall, Dewey, Carr and Cattell. The proposition merely implies the existence of a far more determinant and refined structure of behavior than the early functionalists anticipated. Marx and Hillix, Chapter 5.

What functions are performed for the organism by the components of the personality?[52] The function of the motivational system is to translate the biological, neurological and emotional requirements of the organism into automatic sources of tension which continually force the organism along physical and social vectors in search of values that will ensure survival, health and propagation. The alternating "current" of the tension reducing need gears activity to the homeostatic requirements of the organism.

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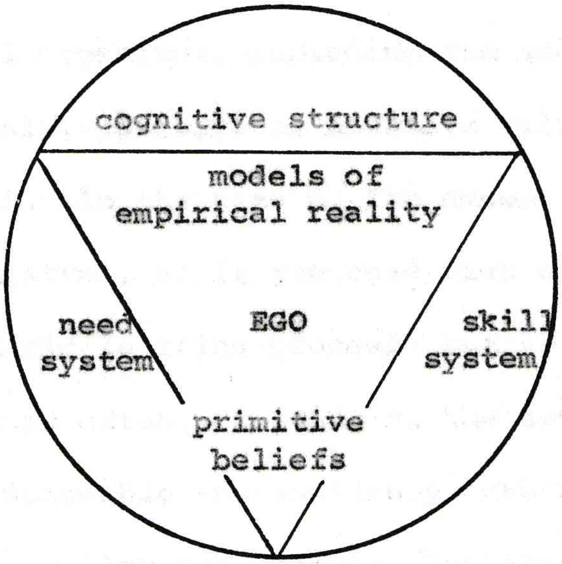
[52] The social functions of personality components will be discussed in the first pages of the following chapter.

Tension was undoubtedly a biological specialization which occurred early in the history of evolution, and enabled organisms to translate latent motor capacities into more refined operant and respondent activities. The continuous interplay between refining sources of tension by segmenting needs and refining motor skills by segmenting the operants and respondents that acquired values to meet the new differentiations in the need system became the basis for greater efficiency in the use of energy. Motives, in contrast, represent a higher order, cognitive adaptation designed to reduce large numbers of needs into small bundles that can be efficiently met by the values aggregated in specific social system roles. In effect, the increasing segmentation of the need system eventually began to outstrip the processes of social evolution that placed greater and greater restraint upon access to values; motives are a way of bringing the situation back into a reasonably adequate balance.

The cognitive system performs two seemingly contradictory functions which evolve out of two basic problems. The first problem is that of bridging the gap between what is known and what must be known to survive, stay healthy and propagate; the cognitive solution is the development of a specialized peripheral belief system devoted to the evolution of more accurate approximations of reality upon which operant and respondent activity can confidently be based. The second problem is that of imposing conceptual stability on an essentially unpredictable and uncertain world full of uninterpreted events; the cognitive solution is the evolution of a primitive belief system which interprets the place of the organism in reality, renders unpredictable events meaningful, and provides the conceptual comfort of a stable epistemological anchor. The operant and respondent skill trait system functions to provide the organism with a repertoire of motor and perceptual skills that can be employed in the acquisition of values. The need for this system arises out of the fact that the first condition of acquisition among social beings is exchange; the relative complexity of the system depends upon the number of terminal manipulations required prior to actual acquisition of desired values. Finally, the function of the ego is to integrate and coordinate the components of the personality in the way that best maximizes efficiency. It is a kind of manager, devoted to harmonizing potentially discontinuous or incongruent components according to the demands of concrete situations. It is also the personality's chief strategist in the acquisition struggle. Together, the components of the personality imply the following model:

Figure 2.8



Learning

All of the premises upon which activity is based, and the components through which it is processed (except the biogenic and neurogenic needs), are learned. Exactly how the cognitive, skill trait and ego components of the personality are shaped will be examined in the next chapter. Our focus now is the articulation of the basic elements of the learning process itself, abstracted from any particular component. The property space of learning is divided between basic and social learning. The former is a straightforward process that depends upon sensory and neural physiology, while the latter is a more complex, cognitive activity that depends upon the capacities of the basic process. In general, learning is based partly on the fact that all organisms, including the amoeba, are capable of assigning positive or negative values to environmental stimuli. In the case of the amoeba, the assignment is beyond control, as is the case with all organisms subject to the basic learning process; but in the case of human beings, it is often, at least at the level of social learning, both manageable and arbitrary. We may infer that all amoebas make similar assignments, but it is clear from experience that human beings do not. Masochism is an excellent example: pain, or what other observers regard as pain, is classified cognitively by the masochist as pleasure. The ability to assign plus (+) or minus (-) signs to stimuli is, in the most limited case, a function of the inherent limitations of the organism's sensory equipment. One cannot help noticing the obvious similarity between the capacities inherent in the sensory apparatus of an organism and the electrical properties of its chemistry. Whether this happy coincidence between the bases of learning and chemistry and physics represents an approximation of some real, universal principle underlying all organic processes, or whether it is simply a mistaken extrapolation from Aristotelian, dichotomous logic, is an open question. Either explanation is plausible, but regardless of which is correct empirically, it seems obvious that all sensing organisms are not only capable of making assignments, but must make them as a condition for survival.

Learning also appears to be based upon another significant neurophysiological characteristic of living organisms: the innate capacity to grow either weaker or stronger, depending upon the conditions of nurturance and activity. Possibly the best analogy is physical conditioning, in which, as more and more demands are made upon muscles, muscle tissues grow in size, producing a potential for greater strength.[53] The process is one of building strength through added increments of exercise. The analogy is a crude, but essentially accurate approximation of the principle of reinforcement. If, for example, a positive stimulus is received in conjunction with the emission of a particular activity, an increment of strength is added to the process which led to the emission of that activity, such that the probability of the emission of the activity under similar conditions in the future increases.[54] Alternatively, if no stimuli are received or if the stimuli received are classified as negative, the probability of emission weakens, which by inference means that increments of strength have been subtracted. The process of strengthening activity is reinforcement; the process of weakening it, deterrence. When activity has been weakened to the point that it will not be emitted again, it is said to be extinct. However, for the process of reinforcement, there exist thresholds beyond which added increments of stimuli begin to have diminishing effects upon the strength of activity.[55] Reinforcement and deterrence are affected by both organismic and environmental conditions: stimuli, or values, are a property of the environment. Which activities are reinforced and which are deterred depends upon the character of the environmental stimuli elicited; alternatively, how stimuli are identified (plus or minus) depends upon the state of the organism.

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[53] Carlson and Johnson, p. 384.

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[54] Edward Lee Thorndike, The Fundamentals of Learning (New York: Columbia University Press, 1932). This proposition embodies the essence of Thorndike's Laws of Effect and Exercise.

[55] B. R. Bugelski, The Psychology of Learning Applied to Teaching (New York: Bobbs-Merrill, 1965), p. 69.

Enlarging the Outcomes

In the simplest case, there are two states of the organism and two states of the environment: with respect to any biogenic or emotional need, an organism is either deprived or satiated; with respect to the history of stimuli in particular settings, settings are either munificent or aversive. Nominally, the terms can be defined:

deprivation df that state of the organism induced when (a) expected or scheduled acquisition of positive values fails to materialize, (b) when all values on hand have been consumed or all energy used, (c) when a positive value has been withdrawn, (d) when a negative value has been presented. Deprivation can be certified by the existence of any of the above states, plus the independent existence of higher tension or anxiety.

satiation df that state of the organism induced when (a) expected or scheduled acquisition of a positive value occurs, (b) when there are values on hand or in view, (c) when a positive value is not withdrawn or when a negative value is withdrawn, (d) when a prospective negative value is not presented. Satiation can be validated by the existence of any of the above states plus the independent reduction of tension or anxiety.

munificent df that state of the environment in which there has been in the past a consistently high distribution of positive values and a low distribution of negative values.

Types of values are positive and negative: a positive value or stimulus (one assigned a plus sign) is a reward and a negative value or stimulus (one assigned a minus sign) is a punishment; rewards reinforce when they reduce tension or anxiety and punishments deter when they increase or fail to reduce tension or anxiety.[56] The terms positive and negative are deliberately abstract in order to avoid the usual hedonistic implications that rewards induce pleasure and punishments induce pain. At the human level, there is often no consensus about what is pleasurable or painful.

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[56] Clark L. Hull, Principles of Behavior (New York: Appleton-Century-Crofts, 1943). Hull extends the Law of Effect to include drive reduction as a source of reinforcement.

Perhaps the greatest limitation of modern learning theory, especially as applied to human beings, has been the failure to relate variable levels of values or stimuli to differential degrees of reinforcement. Learning curves almost always display discontinuous properties. According to Bugelski,

> The course of learning depends upon what is being learned, the readiness of the learner, various individual difference factors, and such features as the drive state, incentive values, complexity of stimulus situations, and even the features of performance measured.[57]

Although it is probably impossible to include each of the factors in an analytic typology, the state of the organism and the environment can be combined with types and directions of values to derive a number of refinements in the degree to which values reinforce or deter. Types of values are positive or negative; directions are presentation, withdrawal, or neither. A minus (-) refers to weak reinforcement or deterrence; a plus (+) to strong reinforcement or deterrence; and a double plus (++) to excessively strong reinforcement or deterrence. The tables should be read "an activity of X in a particular set of conditions elicits the presentation, withdrawal or null response from the environment." Thus,

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[57] Bugelski, p. 70.

Figure 2.9

Present Positive Value

	Munificent	Aversive
Satiated	- reinforcement	+ reinforcement
Deprived	+ reinforcement	++ reinforcement

Present Negative Value

	Munificent	Aversive
Satiated	- deterrence	+ deterrence
Deprived	++ deterrence	- deterrence

Withdraw Positive Value

	Munificent	Aversive
Satiated	- deterrence	+ deterrence
Deprived	++ deterrence	- deterrence

Withdraw Negative Value

	Munificent	Aversive
Satiated	- reinforcement	+ reinforcement
Deprived	+ reinforcement	++ reinforcement

Figure 2.9 (Continued)

Nothing

	Munificent	Aversive
Satiated	no effect	no effect
Deprived	++ deterrence	- reinforcement

In reality, munificent and aversive states are cognitive conditions of the organism that have been affected by past history of the environment. The past history builds up expectations which predict future states. Thus, in a munificent state of the environment, an organism expects continued munificence; in an aversive environment, it expects continued deprivation. However, when an organism has been satiated, its expectations are of little consequence; when deprived, they become decisive. Thus, when

1) a satiated organism is in a historically munificent environment, the presentation of a positive value or the withdrawal of a negative value is only weakly reinforcing because satiation makes additional increments of the same value less important and because satiation produces a devaluation of expectations; presentation of a negative value or withdrawal of a positive value are only weakly deterring for the same reasons;

2) a satiated organism is in a historically aversive environment, the presentation of a positive value or the withdrawal of a negative value is strongly reinforcing because even though gratified, the expectation of future aversiveness induces fear--in a sense, the organism overconsumes in anticipation of future deprivation (the gluttony syndrome); presentation of a negative value or withdrawal of a positive value produces strong deterrence because the environment is made even more aversive;

3) a deprived organism is in a historically munificent environment, the presentation of a positive value is strongly reinforcing because gratification follows; withdrawal of a negative value is strongly reinforcing because the munificence of the environment has been maintained, and deprivation reduced; presentation of a negative value or withdrawal of a positive value produces excessive deterrence because both deprivation and aversiveness have increased;

4) a deprived organism is in a historically aversive setting, the presentation of a positive value is excessively reinforcing because the organism's need has been gratified and the dire predictions of the expectations were not met; withdrawal of a negative value is also excessively reinforcing because deprivation has been reduced and expectations

not met; withdrawal of a positive value and presentation of a negative value produces only slight deterrence because even though deprivation has increased, the organism is already prepared to accept it--if things are bound to get bad anyhow (expectation), why fuss when it happens?

5) a deprived organism is in a munificent environment, but gets nothing, it is excessively deterred because deprivation has been extended and expectations not met;

a deprived organism is in an aversive environment, but gets nothing, it is weakly reinforced because even though deprivation is prolonged, expectations have been met;

a satiated organism is in either a munificent or aversive environment, but gets nothing, it is unaffected because it is satiated, and expectations are therefore marginally important.

The double (++) plus condition symbolizes emotional behavior, either anger or joy. For example, where a deprived organism emits activity in a munificent environment and receives a negative value, anger explodes. The reverse response (joy) occurs when activity elicits the withdrawal of a negative value. On the other hand, where a deprived organism emits activity in an aversive setting, but unexpectedly elicits a positive value, joy erupts; substantially the same result occurs when the activity produces the withdrawal of a negative value. Finally, where a deprived organism emits activity in a munificent environment, but unexpectedly fails to receive any value, let alone the one desired, anger results. Apparently, the critical constituents in emotional behavior are the failure to meet expectations and the inducement of severe deprivation or its alleviation.

The effects of environmental stimuli or values on activity are either temporary or permanent; the events just reviewed fall into the latter category because of the inherently incremental or decremental character of reinforcement and deterrence. The dichotomy between permanent and temporary effects follows the demands of hard research findings in the field of basic learning which support the proposition that aversive stimulation in the form of slapping or the application of an electric shock has only temporary effects on the emission of operants. Skinner, for example, reports that rats slapped the first day of an experiment experienced a depression of responses, but on the second day caught up with those subjects extinguished through nonreinforcement.[58] At the level of basic learning, aversive stimulation probably does not have long term effects because experimental animals assign roughly the same values to the aversive stimuli. However, on the social learning plane, there is a much broader range of assignment available. If a person identifies the aversive stimulus as the presentation of disapproval, then it ceases to be an aversive stimulus and becomes instead just another negative value, which, if our theory is correct, does have relatively permanent effects on the strength of activity. Thus, an observer may recoil at the sight of a mother beating her child and identify the beating as aversive stimulation, but the child may regard the beating as a stern extension of affection. After all, it is the learner's perception that counts in learning, not the observer's.

Part of the difficulty in identifying aversive stimulation as the main deterrent to the learning process stems from the reductionist conceptual scheme employed by most experimental psychologists. The scheme limits values to positive stimuli and aversive stimulation and vectors to the presentation and nonpresentation of values. The presentation of positive stimuli is held to account for reinforcement; the nonpresentation of stimuli for the lack of reinforcement; and presentation of aversive stimuli for the temporary suppression of activity. The scheme totally ignores the possibility of withdrawing positive values, presenting negative stimuli, or merely doing nothing. In fact, every operant or respondent emitted by an organism is either reinforced or deterred; even the absence of an elicited response from the environment affects the strength or weakness of the activity. Bijou and Baer even posit a neutral class of stimuli that have no effect on behavior.[59] Whatever an organism elicits has an effect, if it is perceived. The reductionist conceptual scheme persisted because it could so parsimoniously interpret the equally narrow and limited result of controlled experiments with animals. Experimentation rarely permits observation of the experimental animal in its natural habitat to discover its preferences, idiosyncrasies and habits. The methodological demand that as many variables be excluded as possible from an experiment invariably leads to the exclusion of these factors. Yet, if preferences, idiosyncrasies and habits were included, a wider range of stimuli, vectors and reinforcement intensities would immediately come into play and the experimenter would undoubtedly discover that animal learning is a good deal more complex and variable than present findings indicate.

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[58] B. F. Skinner, The Behavior of Organisms: An Experimental Analysis (New York: Appleton-Century-Crofts, 1938), p. 154.

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[59] Sidney Bijou and Donald Baer, Child Development (New York: Appleton-Century-Crofts, 1961), p. 34.

There is yet another source of variance in learning that must be mentioned: the intensity of the stimuli elicited. Values are most directly rewarding when they reduce tension or anxiety by satiating a biogenic or emotional need. Stimuli possessing this important capacity are normally called primary reinforcers; those stimuli paired with primary reinforcers are called conditioned or secondary reinforcers because they come to be habitually associated with the satiation of a particular need. Sentiments are conditioned reinforcers during the process of imprinting emotional needs; once the needs are imprinted or internalized, they generate their own generalized tension and anxiety, and at this point, sentiments may become primary reinforcers. When a conditioned reinforcer is paired with two or more primary reinforcers, it acquires the special status of generalized reinforcer. It is generalized because the momentary condition of the organism (i.e., deprivation